



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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NOTICE OF ACCEPTANCE (NOA)

Mule-Hide Products Co., Inc.
1195 Prince Hall Dr.
Beloit, WI 53511

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Mule-Hide Self-Adhered Roof System over Wood Decks

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA renews NOA# 12-0815.09 and consists of pages 1 through 24.
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 13-0514.12
Expiration Date: 10/11/17
Approval Date: 10/10/13
Page 1 of 24

ROOFING ASSEMBLY APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Materials	SBS/APP/TPO
Deck Type:	Wood
Maximum Design Pressure	-112.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Nail Base	65' 2" x 3' 3-3/8"	ASTM D 6163, Type I	SBS modified asphalt coated fiberglass reinforced base sheet.
Nail Base P	5' 2" x 3' 3-3/8"	ASTM D 6164, Type I	SBS modified asphalt coated polyester reinforced base sheet.
SA Base Sheet (FR)(1.5-mm)	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet 6163 (FR)	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet (1.5-mm)	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet 6163	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA-SBS Cap Sheet (FR)	32' 6" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, polyester reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-SBS Cap Sheet	32' 6" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet	32' 6" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet (FR)	32' 6" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-SBS KoolCap®	32' 6" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.



SA-SBS KoolCap® (FR)	32' 6" x 3' 3- ³ / ₈ "	ASTM D 6164, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP KoolCap®	32' 6" x 3' 3- ³ / ₈ "	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP KoolCap® (FR)	32' 6" x 3' 3- ³ / ₈ "	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface
SA-APP PF30 KoolCap®	32' 10" x 3' 3- ³ / ₈ "	ASTM D6222 Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a white film laminate on the top surface.



APPROVED INSULATIONS:

TABLE 2

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
Mule Hide Poly ISO 2	Polyisocyanurate foam insulation	Mule-Hide Products Co., Inc.
Mule Hide Poly ISO 1	Polyisocyanurate foam insulation	Mule-Hide Products Co., Inc.
ACFoam-II	Polyisocyanurate foam insulation	Atlas Roofing Corporation
ACFoam-III	Polyisocyanurate foam insulation	Atlas Roofing Corporation
High Density Wood Fiberboard	Wood fiber insulation board	Generic
Perlite Insulation	Perlite insulation board	Generic
Type X Gypsum	Fire resistant rated gypsum.	Generic
DensDeck, DensDeck Prime	Gypsum insulation board	Georgia-Pacific
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, LLC
H-Shield CG	Polyisocyanurate/perlite composite insulation	Hunter Panels, LLC
ENRGY 3, JM ISO 3	Polyisocyanurate foam insulation	Johns Manville Corp.
Fesco Board	Expanded mineral fiber	Johns Manville Corp.
Multi-Max FA-3	Polyisocyanurate foam insulation	Rmax Operating, LLC.
SECUROCK Gypsum-Fiber Roof Board	Fiber reinforced coverboard	United States Gypsum Corporation



APPROVED FASTENERS:

TABLE 3

<u>Fastener Number</u>	<u>Product Name</u>	<u>Product Description</u>	<u>Dimensions</u>	<u>Manufacturer (With Current NOA)</u>
1.	Dekfast Fasteners 12, 14 & 15 HS	Insulation fastener for wood, steel and concrete decks		SFS Intec, Inc.
2.	Dekfast Galvalume Steel Hex Plate	Galvalume hex stress plate.	2 7/8" x 3 1/4"	SFS Intec, Inc.
3.	Dekfast Dekflat Round Plastic Lock Plate	Polypropylene locking plate.	3" x 3 1/4"	SFS Intec, Inc.
4.	#12 Standard Roofgrip & #14 Roofgrip	Insulation and membrane fastener	Various	OMG, Inc.
5.	Flat Bottom Metal Plate	A2-SS aluminized steel plate	3" square	OMG, Inc.
6.	OMG Plastic Plate	Polyethylene stress plate	3.2" round	OMG, Inc.
7.	Trufast #14 HD Fastener	Insulation fastener for steel and wood decks		Altenloh, Brinck & Co. U.S., Inc.
8.	Trufast 3" Metal Insulation Plate	Round Galvalume AZ50 steel plate	3.23 round 3" round	Altenloh, Brinck & Co. U.S., Inc.
9.	Trufast SIP TP Fastener	Carbon steel fastener	Various	Altenloh, Brinck & Co. U.S., Inc.
10.	Dekfast Galvalume Steel 3 in. Round	3" round galvalume AZ50 steel plate	3" round	SFS Intec, Inc.
11.	Mule-Hide HDP Fastener	Insulation fastener for steel and wood decks	Various	Mule-Hide Products Co., Inc..
12.	Mule-Hide 3" Insulation Plate	Round Galvalume AZ50 steel plate	3.23 round 3" round	Mule-Hide Products Co., Inc.
13.	Millennium One-Step™ Foamable Adhesive	Insulation Adhesive	Various	Adco Products, Inc.

APPROVED SURFACING:

TABLE 4

	<u>Product Name</u>	<u>Product Description</u>	<u>Application Rate</u>	<u>Specification</u>	<u>Manufacturer</u>
Gravel		To be installed in a flood coat of approved asphalt at 60 lbs/sq	400 lbs/sq	N/A	Generic
Slag		To be installed in a flood coat of approved asphalt at 60 lbs/sq	300 lbs/sq	N/A	Generic



EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Name/Report</u>	<u>Report No.</u>	<u>Date</u>
Factory Mutual Research Corporation	4470	J.I. 2W7A7.AM	08.04.94
	4450	2D5A9.AM	06.22.99
	4470	J.I. 3001334	02.15.00
	4470	J.I. 3000857	01.12.00
	4470	J.I. 3004091	01.12.00
	4470	3012321	07.29.07
	4450	3014751	08.27.03
	4450	3019317	06.30.04
	4470	3014692	08.05.03
Trinity ERD	TAS 114	11752.09.99-1	02.08.00
	TAS 114	02764.09.05	09.09.05
	TAS 114	020843.02.05-1	02.10.05
	TAS 114	02762.03.05	03.30.05
	TAS 117(B)-ASTM D903	020841.06.04	06.02.04
	TAS 114	P1734.07.06-R1	02.27.07
	TAS 114	02843.07.07	07.23.07
	TAS 114	P1738.02.07	02.05.07
	TAS 114	P1739.01.07	01.23.07
	TAS 117(B)-ASTM D6862	C8500SC.11.07	11.30.07
	ASTM D6164 / ASTM D6222	P10490.08.08	08.13.08
	ASTM D6164 / ASTM D6222	P10490.10.08-R1	10.03.08
	ASTM D6222	P7400.03.08-R2	10/09/08
	TAS 114(D) – ASTM D1876	P10070.10.08	10/09/08
	ASTM D6222	P10490.10.08-2	10/30/08
	FM 4470 & TAS 114	P33970.03.11	03/15/11
	ASTM D6163 / ASTM D 4601	P33960.03.11	03/15/11
	ASTM D6164	P37590.07.13-1	07/02/13
	ASTM D6164	P37590.03.13-3A	03/06/13
	ASTM D6163	P37590.03.13-2-R1	02/05/13
ASTM D6222	P37590.09.13	09/12/13	
PRI Asphalt Technologies	ASTM D6222	PUSA-061-02-02	01/28/08
	ASTM D6222	PUSA-062-02-02	12/04/08
	ASTM D6163	PUSA-064-02-02	02/27/08



APPROVED ASSEMBLIES:

Membrane Type: SBS/APP

Deck Type II: Wood, Insulated

Deck Description: 1 9/32" or greater plywood or wood plank.

System Type A(1): All insulation layers are adhered to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Anchor Sheet: One ply of Nail Base or an ASTM D4601, Type II approved base sheet fastened to the deck as described below:

Fastening #1: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in three equally spaced staggered rows in the center of the sheet.

Fastening #2: Attach base sheet using OMG Roofgrip Fasteners and Flat Bottom Plates, Dekfast 14 with Galvalume Steel Hex Plates or Trufast #14 HD Fasteners with Trufast 3" Metal Insulation Plates or Mule-Hide HDP Fasteners with Mule-Hide 3" Insulation Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.

One or more of the following

Base Insulation Layer (Optional)

Insulation Fasteners
(Table 3)

Fastener
Density/ft²

Any approved Polyisocyanurate listed in Table 2
Minimum 1" thick

N/A

N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Top Insulation Layer

Insulation Fasteners
(Table 3)

Fastener
Density/ft²

DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board
Minimum 1/4" thick

N/A

N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.



Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

Maximum Design Pressure: -52.5 psf; (See general limitation #7.)



Membrane Type: SBS/APP
Deck Type II: Wood, Insulated
Deck Description: 1⁹/₃₂" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c. or #8 wood screws at 6" o.c.
System Type A(2): All insulation layers are adhered to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System limitations apply.

Anchor Sheet: One ply of Nail Base or Nail Base P fastened to the deck as described below:
Fastening: Attach base sheet using OMG Roofgrip Fasteners and Flat Bottom Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.

One or more of the following

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved Polyisocyanurate listed in Table 2 Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.
Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.
Maximum Design Pressure: -60 psf; (See general limitation #7.)



Membrane Type: SBS/APP
Deck Type II: Wood, Insulated
Deck Description: 1 9/32" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c. or #8 wood screws at 6" o.c.
System Type A(3): All insulation layers are adhered to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Anchor Sheet: One ply of an ASTM D4601, Type II approved base sheet fastened to the deck as described below:

Fastening: Attach base sheet using 11 ga. Annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in three equally spaced staggered rows in the center of the sheet.

One of more of the following:

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved Polyisocyanurate listed in Table 2 Minimum 1" thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Dens Deck, Dens Deck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.



Maximum Design Pressure: -60 psf; (See general limitation #7.)

Membrane Type: SBS/APP

Deck Type II: Wood, Insulated

Deck Description: 1⁹/₃₂" or greater plywood or wood plank.

System Type A(4): All insulation layers are adhered to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Anchor Sheet: One ply of Nail Base or Nail Base P fastened as below:

Fastening: 12 ga. Annular ring shank nails and 1-5/8" tin-caps attached 6" o.c. in 4" lap and 6" o.c. in four equally spaced staggered rows.

Base Insulation Layer

Insulation Fasteners
(Table 3)

Fastener
Density/ft²

Mule Hide Poly ISO 2, ACFoam-II, ACFoam-III, Mule Hide Poly ISO 1, H-Shield, H-Shield CG, Multi-Max FA3, or ENRGY 3 Minimum 1" thick	N/A	N/A
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Insulation: Adhered with Millenium One-Step Foamable Adhesive applied over rows of tin-caps in continuous rows 7" o.c.

Base Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

Maximum Design Pressure: -60 psf; (See general limitation #7.)



Membrane Type: SBS/APP
Deck Type II: Wood, Insulated
Deck Description: 1⁹/₃₂" or greater plywood or wood plank.
System Type C(1): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more of the following

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved Polyisocyanurate listed in Table 2 Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Approved High Density Wood Fiberboard Minimum 1/2" thick	1	1:1.33 ft ²
DensDeck Minimum 1/4" thick	1	1:1.33 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

Maximum Design Pressure: -52.5 psf; (See General limitation #7.)



Membrane Type: SBS/APP
Deck Type II: Wood, Insulated
Deck Description: 1⁹/₃₂" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c.
System Type C(2): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more layers of the following:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved Polyisocyanurate listed in Table 2 Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Approved High Density Wood Fiberboard Minimum 1/2" thick	1	1:1.33 ft ²
DensDeck Minimum 1/4" thick	1	1:1.33 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

Maximum Design Pressure: -67.5 psf; (See General limitation #7.)



- Membrane Type:** SBS/APP
- Deck Type 1I:** Wood, Insulated
- Deck Description:** ¹⁹/₃₂" or greater plywood or wood plank, fastened with wood screws at 6" o.c.
- System Type C(3):** All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more of the following:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ENRGY 3, Mule Hide Poly ISO 1, H-Shield or Mule Hide Poly ISO 2 Minimum 1.5" thick	1, 7, or 11	1:1.33 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
- Membrane:** One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.
- Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.
- Maximum Design Pressure:** -82.5 psf; (See General limitation #7.)



- Membrane Type:** SBS/APP
Deck Type II: Wood, Insulated
Deck Description: 19/32" or greater plywood or wood plank.
System Type D(1): All layers of insulation and base sheet simultaneously attached, membrane subsequently adhered..

All General and System Limitations apply.

One or more layers of the following:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved Polyisocyanurate listed in Table 2 Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Fesco Board Minimum 3/4" thick	N/A	N/A
Approved High Density Wood Fiberboard Minimum 1/2" thick	N/A	N/A
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

- Base Sheet:** One or more plies of Nail Base or Nail Base P fastened to the deck as described below:
- Fastening:** Attach base sheet using OMG Roofgrip Fasteners and Flat Bottom Plates, Dekfast 14 with Hex Plates or Trufast #14 HD Fasteners with Trufast 3" Metal Insulation Plates or Mule-Hide HDP Fasteners and Mule-Hide 3" Insulation Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.
- Ply Sheet:** One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
- Membrane:** One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.
- Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.



Maximum Design

Pressure: -52.5 psf; (See General limitation #7.)



Membrane Type: SBS/APP
Deck Type II: Wood, Insulated
Deck Description: 1⁹/₃₂" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c. or #8 wood screws at 6" o.c.
System Type D(2): All layers of insulation and base sheet mechanically fastened, membrane subsequently adhered.

All General and System Limitations apply.

One or more layers of the following:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved Polyisocyanurate listed in Table 2 Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Fesco Board Minimum 3/4" thick	N/A	N/A
Approved High Density Wood Fiberboard Minimum 1/2" thick	N/A	N/A
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Base Sheet: One or more plies of Nail Base or Nail Base P fastened to the deck as described below:

Fastening: Attach base sheet using OMG Roofgrip Fasteners and Flat Bottom Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.

Ply Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

Maximum Design Pressure: -60 psf; (See General limitation #7.)



Membrane Type: SBS/APP
Deck Type 1: Wood, Non-Insulated
Deck Description: ¹⁹/₃₂" or greater plywood or wood plank.
System Type E(1): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of Nail Base or Nail Base P fastened to the deck as described below:

Fastening #1: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in three equally spaced staggered rows in the center of the sheet.

Fastening #2: Attach base sheet using OMG Roofgrip Fasteners and Flat Bottom Plates, Dekfast 14 with Galvalume Steel Hex Plates or Trufast #14 HD Fasteners with Trufast 3" Metal Insulation Plates or Mule-Hide HDP Fasteners and Mule-Hide 3" Insulation Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.

Ply Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

Maximum Design Pressure: -52.5 psf; (See General limitation #7.).



- Membrane Type:** SBS/APP
- Deck Type 1:** Wood, Non-Insulated
- Deck Description:** ¹⁹/₃₂" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c. or #8 wood screws at 6" o.c.
- System Type E(2):** Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

- Base Sheet:** One ply of Nail Base or Nail Base P fastened to the deck as described below:
- Fastening:** Attach base sheet using OMG Roofgrip Fasteners and Flat Bottom Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.
- Ply Sheet:** One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
- Membrane:** One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.
- Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.
- Maximum Design Pressure:** -60 psf; (See General limitation #7.)



Membrane Type: SBS/APP
Deck Type 1: Wood, Non-Insulated
Deck Description: ¹⁹/₃₂" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c. or #8 wood screws at 6" o.c.
System Type E(3): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of Nail Base or Nail Base P fastened to the deck as described below:
Fastening: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in three equally spaced staggered rows in the center of the sheet.
Ply Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.
Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.
Maximum Design Pressure: -60 psf; (See General limitation #7.)



Membrane Type: SBS/APP
Deck Type 1: Wood, Non-Insulated
Deck Description: ¹⁹/₃₂" or greater plywood or wood plank, fastened to supports spaced 24" o.c. and to blocking members spaced 48" o.c. with TruFast TP #10x2-7/8" screws spaced 6" o.c.
System Type E(4): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of Nail Base or Nail Base P fastened to the deck as described below:
Fastening: Attach base sheet using 12 ga. ring shank nails and tin caps spaced 4" o.c. in a 4" lap and 4" o.c. in four equally spaced staggered rows in the center of the sheet.
Ply Sheet: One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
Membrane: One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR) self adhered.
Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.
Maximum Design Pressure: -97.5 psf; (See General limitation #7.)



- Membrane Type:** SBS/APP
- Deck Type 1:** Wood, Non-Insulated
- Deck Description:** ¹⁹/₃₂" or greater plywood or wood plank, fastened to supports spaced 24" o.c. and to blocking members spaced 48" o.c. with #10x3" wood screws spaced 6" o.c.
- System Type E(5):** Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

- Base Sheet:** One ply of Nail Base or Nail Base P fastened to the deck as described below:
- Fastening:** Attach base sheet using 12 ga. ring shank nails and tin caps spaced 4" o.c. in a 4" lap and 4" o.c. in four equally spaced staggered rows in the center of the sheet.
- Ply Sheet:** One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
- Membrane:** One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-SBS Cap Sheet, or SA-SBS Cap Sheet (FR) self adhered.
- Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

- Maximum Design Pressure:** -112.5 psf; With SA Base Sheet 6163 or SA Base Sheet 6163 (FR) (See General limitation #7.)
-97.5 psf; With SA Base Sheet or SA Base Sheet (FR)(See General limitation #7.)



- Membrane Type:** SBS/APP
- Deck Type 1:** Wood, Non-Insulated
- Deck Description:** ¹⁹/₃₂" or greater plywood or wood plank, fastened to supports spaced 24" o.c. with #8x3" wood screws spaced 6" o.c.
- System Type E(6):** Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

- Base Sheet:** One ply of Nail Base or Nail Base P fastened to the deck as described below:
- Fastening:** 12 ga. annular ring shanked nails and 1-5/8" tin-caps 6" o.c. in 4" lap and 6" o.c. in four equally spaced staggered rows. Tin-caps are primed with ASTM D41 Primer
- Ply Sheet:** One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
- Membrane:** One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap®, SA-APP KoolCap® (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.
- Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.
- Maximum Design Pressure:** -112.5 psf; (See General limitation #7.).



WOOD DECK SYSTEM LIMITATIONS:

1. A slip sheet is required with Ply 4 and Ply 6 when used as a mechanically fastened base or anchor sheet.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.
Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE

